

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: Weiner, Amy J.
Houghton, Michael

(ii) TITLE OF INVENTION: Conserved Motif of Hepatitis C Virus
E2/NS1 Region

(iii) NUMBER OF SEQUENCES: 134

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Chiron Corporation
(B) STREET: 4560 Horton Street
(C) CITY: Emeryville
(D) STATE: CA
(E) COUNTRY: USA
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(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US 08/823,980
(B) FILING DATE: 25-MARCH-1997
(C) CLASSIFICATION:

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Goldman, Kenneth M.
(B) REGISTRATION NUMBER: 34,174
(C) REFERENCE/DOCKET NUMBER: 0938.007

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: 510-601-2719
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(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 6 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Ala, Arg, Asp, Gly, Lys, Ser, or Thr"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Ile, Leu, Met, Phe or Trp"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Leu or Phe"

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Ala or Gly"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Xaa Xaa Xaa Xaa Xaa Xaa
1 5

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /label =Dpr
/note=2,3-diaminopropionic is acetyl cysteine

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /label=Ahe
/note= 2-amino heptanoic acid is butyl alanine

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Xaa Xaa Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser
1 5 10 15

Gly Phe Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu
20 25 30

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 5 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Val Ser Leu Leu Ala
1 5

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Ser Leu Leu Ala Pro Gly Ala
1 5

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 5 amino acids

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Leu Ala Pro Gly Ala
1 5

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Ala, Pro or Ser"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Ser Leu Leu Xaa Xaa Gly Xaa
1 5

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 7
- (D) OTHER INFORMATION: /label= variable
/note= "Represents Ala, Pro or Ser"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Ser Leu Phe Xaa Xaa Gly Xaa
1 5

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

~~Ins 1A~~ (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Xaa Thr Xaa Val Thr Gly Gly Xaa Ala Ala Arg Thr Thr Xaa Gly Xaa
1 5 10 15

Xaa Ser Leu Phe Xaa Xaa Gly Xaa Ser Gln Xaa Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

~~K1~~ (ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Ala Thr Tyr Ala Thr Gly Ala Ala Gln Gly His Ala Thr Asn Ser Phe
1 5 10 15

Val Ser Leu Phe Arg Ser Gly Ala Ser Gln Asn Leu Lys Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Ser Thr Gln Val Thr Gly Gly Gln Ala Ala His Thr Val Arg Gly Val
1 5 10 15
Ala Ser Ile Phe Ser Pro Gly Ser Arg Gln Asp Ile Ser Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
1 5 10 15
Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Ser Thr His Val Met Gly Ala Gln Gln Gly Arg Val Ala Lys Gly Phe
1 5 10 15
Thr Ser Leu Phe Gly Pro Gly Pro Ala Gln Lys Ile Gly Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Ser Thr His Val Thr Gly Ala Val Gln Gly His Ser Ile Arg Gly Leu
1 5 10 15
Thr Ser Leu Phe Thr Ser Gly Pro Ala Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Glu Thr His Val Thr Gly Gly Ile Ala Ala Lys Thr Thr Ala Ser Leu
1 5 10 15
Thr Gly Leu Phe Asn Leu Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Glu Thr His Val Thr Gly Gly Asn Ala Gly Arg Ala Ala Gly Ile
1 5 10 15

Ala Gly Leu Phe Thr Leu Gly Ala Lys Gln Asn Val Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Gln Thr Arg Val Thr Gly Gly Thr Ala Ala Gln Ser Thr Ala Arg Ile
1 5 10 15

Ala Gly Leu Phe Ser Leu Gly Ala Arg Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Gln Thr His Val Met Gly Gly Thr Ala Gly Arg Asn Ala Tyr Gly Leu
1 5 10 15

Thr Ser Phe Leu Ser Val Gly Ala Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Glu Thr His Val Met Gly Gly Ala Ala Ser Ser Thr Thr Tyr Arg Phe
1 5 10 15

Ala Ser Leu Phe Thr Ser Gly Pro Ala Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Glu Thr His Val Thr Gly Gly Ser Ala Ala Ser Thr Thr Ala Thr Phe
1 5 10 15

Ser Lys Leu Phe Met Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile
20 25 30

 (2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Gly Thr Thr Arg Val Gly Gly Ala Ala Ala Arg Thr Thr Ser Ser Phe
1 5 10 15

Ala Ser Leu Leu Thr His Gly Pro Ser Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Gly Thr His Val Thr Gly Gly Ala Ala Ala Arg Asp Ala Phe Arg Phe
1 5 10 15

Ser Ser Leu Phe Thr Arg Gly Pro Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Ala Thr Asn Met Thr Gly Gly Ala Pro Ala Arg Thr Thr Tyr Lys Leu
1 5 10 15

Thr Thr Leu Phe Ser Tyr Gly Ala Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

His Asn His Val Thr Gly Gly Thr Ser Ala Arg Asn Thr Phe Gly Ile
1 5 10 15

Thr Thr Leu Phe Thr Gln Gly Pro Ser Gln Lys Leu Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Gly Thr His Val Thr Gly Gly Ala Ala Ala Arg Asn Ala His Ser Leu
1 5 10 15

Thr Ser Leu Leu Ala Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Thr Thr Arg Val Ser Gly Gly Thr Ala Ala His Thr Thr Ala Gly Leu
1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Pro Arg Gln Asn Ile His Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Thr Thr His Val Ser Gly Gly Thr Ala Gly Arg Thr Thr Ala Ser Leu
1 5 10 15

Thr Ser Phe Phe Ala Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Thr Thr His Val Thr Gly Gly Ala Thr Gly His Thr Thr Ser Gly Ile
1 5 10 15

Ala Ser Leu Phe Leu Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Asp Thr Tyr Ala Ser Gly Gly Ala Gln Gly Arg Ser Thr Leu Gly Phe
1 5 10 15

Thr Ser Leu Phe Thr Pro Gly Ala Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Asp Thr Tyr Ala Ser Gly Gly Ala Ala Gly Arg Ala Thr Tyr Gly Ile
1 5 10 15

Thr Ser Leu Phe Ala Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Arg Thr Tyr Ala Ser Gly Gly Ala Ala Gly Arg Thr Thr His Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Thr Gly Ala Arg Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Gln Thr Tyr Val Thr Gly Gly Lys Ala Ala Gln Thr Val Ser Gly Phe
1 5 10 15

Thr Gly Leu Phe Ser Ser Gly Pro Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Asp Thr Tyr Val Ser Gly Gly Ala Ala Ala Arg Ser Ile Ser Gly Phe
1 5 10 15

Thr Ser Leu Phe Thr Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Ser Thr Tyr Val Thr Gly Gly Glu Ala Ser Arg Thr Thr Arg Gly Phe
1 5 10 15

Ala Ser Leu Phe Thr Leu Gly Ser Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Asn Thr Tyr Val Thr Gly Gly Ser Ala Gly Arg Ala Val Ala Gly Phe
1 5 10 15

Ala Gly Leu Leu Gln Pro Gly Ala Lys Gln Asn Val Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

His Thr Arg Val Thr Gly Gly Gln Val Ala Phe Arg Thr His Gly Leu
1 5 10 15

Val Ser Leu Phe Thr Gln Gly Pro Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

His Thr His Val Thr Gly Gly Arg Val Ala Ser Ser Thr Gln Ser Leu
1 5 10 15

Val Ser Trp Leu Ser Gln Gly Pro Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

His Thr Arg Val Thr Gly Gly Val Gln Gly His Val Thr Ser Thr Leu
1 5 10 15

Thr Ser Leu Phe Arg Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Asn Thr Arg Val Thr Gly Gly Val Gln Gly Arg Asp Thr Ser Gly Leu
1 5 10 15

Val Ser Leu Phe Ser Leu Gly Pro Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:39:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Asp Thr His Val Thr Gly Gly Ala Gln Ala Lys Thr Thr Asn Arg Leu
I 5 10 15

Val Ser Met Phe Ala Ser Gly Pro Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Glu Thr His Val Thr Gly Gly Ala Ser Ala Arg Thr Thr Gln Arg Phe
I 5 10 15

Thr Ser Phe Phe Asp Leu Gly Pro Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Thr Thr Tyr Met Thr Gly Gly Ala Asn Ala Arg Thr Thr Gln Gly Phe
1 5 10 15

Val Ser Leu Phe Thr Pro Gly Pro Ala Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Glu Thr His Val Thr Gly Gly Thr Ser Ala Arg Thr Thr Gln Gly Phe
1 5 10 15

Val Ser Leu Phe Ser Ala Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:43:

| ↵ (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Gly Thr His Val Thr Gly Gly Gln Ala Ala Arg Thr Thr Gln Ser Phe
1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Pro Gln Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:44:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Arg Thr His Val Thr Gly Gly Lys Ala Ala His Thr Thr Lys Gly Phe
1 5 10 15

Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:45:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Glu Thr Arg Val Thr Gly Ala Val Gln Gly His Gly Ala Leu Gly Leu
1 5 10 15

Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:46:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Glu Thr Arg Val Thr Gly Ala Ile Ala Gly Arg Thr Ala Ser Ser Phe
1 5 10 15

Ala Gly Leu Phe Thr Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:47:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Glu Thr Arg Val Thr Gly Gln Gln Val Gly Arg Thr Thr Gln Ser Leu
1 5 10 15

Thr Ser Leu Phe Thr Pro Gly Pro Ser Gln Thr Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:48:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Gln Thr Arg Val Thr Gly Ala Gln Val Gly Arg Thr Thr Ser Ser Leu
1 5 10 15

Thr Ser Leu Phe Thr Pro Gly Pro Ser Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:49:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Arg Thr Gln Val Thr Gly Ala Gln Ala Gly His Thr Thr Ser Gly Leu
I 5 10 15

Ala Ser Leu Phe Thr Pro Gly Pro Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:50:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

K | Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly Phe
I 5 10 15

Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:51:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Thr Gly Ile
1 5 10 15

Ala Ser Leu Phe Thr Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:52:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Ser Thr His Val Thr Gly Gly Thr Ala Ala His Thr Val Ala Gly Phe
1 5 10 15

Ser Ser Leu Phe Thr Val Gly Pro Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:53:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Glu Thr His Val Thr Gly Gly Ala Ala Ala Tyr Thr Ala Ala Gly Leu
1 5 10 15

Ala Ser Leu Phe Thr Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Thr Thr Ala Gly Leu
1 5 10 15

Val Gly Leu Leu Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:55:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Gly Thr His Val Thr Gly Gly Ser Ala Gly Arg Ala Thr Ala Gly Ile
1 5 10 15

Ala Gly Leu Leu Thr Pro Gly Ala Arg Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:56:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

Lys Thr His Val Thr Gly Gly Ser Ala Ala Arg Thr Thr Ser Gly Ile
1 5 10 15

Ala Ser Leu Leu Thr Pro Gly Ala Lys Gln Asn Val Gln Leu Ile

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(2) INFORMATION FOR SEQ ID NO:57:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

Lys Thr Tyr Val Thr Gly Gly Ser Gln Ala Gln Ala Thr Phe Gly Phe
I 5 10 15

Thr Ser Leu Leu Gln Gln Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:58:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

Glu Thr Thr Val Thr Gly Gly Ser Ala Ala His Gly Ala Leu Gly Ile
I 5 10 15

Ala Ser Leu Phe Asn Gln Gly Ala Arg Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:59:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Glu Thr Tyr Val Thr Gly Gly Ala Ser Ala Arg Ser Thr Phe Thr Leu
1 5 10 15

Val Gly Leu Phe Lys Gln Gly Ser Gln Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:60:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Gln Thr Tyr Val Ser Gly Gly Ser Ser Gly Arg Thr Thr Ser Gly Leu
1 5 10 15

Val Ser Ile Phe Ser Pro Gly Ala Ser Gln Asn Leu Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:61:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 31 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Glu Thr Tyr Val Ser Gly Gly Ala Ala Ala Gln Thr Thr Ala Arg Phe

1 5 10 15

Ala Gly Phe Phe Gln Ser Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:62:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Glu Thr Tyr Val Ser Gly Gly Ser Ala Ala Gln Thr Thr Ala Gly Phe
1 5 10 15

Val Arg Leu Phe Glu Thr Gly Pro Lys Gln Asn Ile Gln Leu Ile
20 25 30

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(2) INFORMATION FOR SEQ ID NO:63:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Ser Thr Tyr Val Ser Gly Gly Ala Gln Ala Arg Ala Ala Gln Gly Ile
1 5 10 15

Thr Ser Leu Phe Ser Arg Gly Ser Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:64:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Ser Thr Tyr Val Thr Gly Gly Thr Gln Gly Arg Ala Ala Ser Gly Leu
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ala Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:65:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Asn Thr Tyr Val Ser Gly Gly Thr Ala Gly His Thr Gly His Gly Leu
1 5 10 15

Thr Ala Leu Phe Ser Pro Gly Ala Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:66:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

Ser Thr Ile Val Ser Gly Gly Thr Val Ala Arg Thr Thr His Ser Leu
1 5 10 15

Ala Ser Leu Phe Thr Gln Gly Ala Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:67:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

Glu Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Thr Leu
1 5 10 15

Ala Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:68:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

His Thr Leu Thr Thr Gly Gly His Ala Ala Arg Leu Thr Ser Gly Phe
1 5 10 15

Ala Gly Leu Phe Thr Pro Gly Pro Ser Gln Arg Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:69:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Glu Thr Ile Val Ser Gly Gly Gln Ala Ala Arg Ala Met Ser Gly Leu
1 5 10 15

Val Ser Leu Phe Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:70:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Glu Thr Tyr Thr Ser Gly Gly Asn Ala Gly His Thr Met Thr Gly Ile
1 5 10 15

Val Arg Phe Phe Ala Pro Gly Pro Lys Gln Asn Val His Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:71:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

Thr Thr Tyr Thr Thr Gly Gly Asn Ala Ala Arg Thr Thr Gln Ala Leu
1 5 10 15

Thr Ser Phe Phe Ser Pro Gly Ala Lys Gln Asp Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:72:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Glu Thr Tyr Thr Thr Gly Gly Ser Thr Ala Arg Thr Thr Gln Gly Leu
1 5 10 15

Val Ser Leu Phe Ser Arg Gly Ala Lys Gln Asp Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:73:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Ala Thr Tyr Thr Ser Gly Gly Ser Ala Ala Arg Thr Thr Gln Gly Phe
1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ser Gln Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:74:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Ala Thr Tyr Thr Thr Gly Gly Ser Val Ala Arg Thr Thr His Gly Phe

1 5 10 15

Ser Ser Leu Phe Ser Gln Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:75:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

Val Thr Tyr Thr Thr Gly Gly Ser Gln Ala Arg His Thr Gln Ser Val
1 5 10 15

Thr Ser Phe Phe Thr Gln Gly Pro Ala Gln Arg Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:76:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

His Thr Tyr Thr Thr Gly Gly Thr Val Ala Arg Ser Thr Gln Gly Leu
1 5 10 15

Val Gly Phe Leu Ser Pro Gly Pro Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:77:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Thr Thr Tyr Val Ser Val Gly His Ala Ser Gln Thr Thr Arg Arg Val
1 5 10 15

Ala Ser Phe Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:78:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Thr Thr Thr Val Ser Gly Gly His Ala Ser Gln Ile Thr Arg Gly Val
1 5 10 15

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Thr Ser Phe Phe Ser Pro Gly Ser Ala Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:79:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 31 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Lys Thr Ser Leu Thr Gly Val Thr Arg Ala Arg Ala Ala Ala Arg Leu
1 5 10 15

Thr Ala Leu Phe Ser Ser Gly Pro Ser Gln Arg Ile Gln Leu Ile

20 25 30

(2) INFORMATION FOR SEQ ID NO:80:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Gly Thr Ser Leu Thr Gly Gly Ala Arg Ala Arg Ala Ser Gly Leu
1 5 10 15

Ala Gly Leu Phe Ser Ser Gly Pro Ser Gln Arg Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:81:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Val Thr Gln Val Ser Pro Pro Gln Ala Gly Tyr Thr Thr Ser Val Leu
1 5 10 15

Thr Gly Ile Leu Ser Pro Gly Ala Lys Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:82:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Val Thr Gln Val Ser Gly Gly Gln Ala Gly Tyr Thr Thr Ser Val Leu
I 5 10 15

Thr Gly Ile Leu Ser Pro Gly Ala Lys Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:83:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Gly Thr Tyr Thr Val Gly Gly Ala Ser Ala Phe Thr Thr Ser Arg Leu
1 5 10 15

Thr Ser Leu Phe Ala Leu Gly Pro Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:84:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Asn Thr His Thr Val Gly Gly Thr Glu Gly Phe Ala Thr Gln Arg Leu
1 5 10 15

Thr Ser Leu Phe Ala Leu Gly Pro Ser Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:85:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

Ser Thr Arg Thr Ala Gly Gly Ala Gln Ala Phe Asn Thr Tyr Gly Val
1 5 10 15

Ala Ser Ile Phe Ser Pro Gly Pro Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:86:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

Gln Thr His Thr Val Gly Gly Ser Thr Ala His Asn Ala Arg Thr Leu
1 5 10 15

Thr Gly Met Phe Ser Leu Gly Ala Arg Gln Lys Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:87:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

Asn Thr Arg Thr Val Ala Gly Ser Ala Ala Ala Thr Thr Arg Gly Phe
1 5 10 15

Thr Ser Met Phe Ser Ser Gly Ser Lys Gln Asn Leu Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:88:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:89:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:89:

Glu Thr His Thr Thr Gly Ala Val Ser Gly His Thr Thr Asn Val Leu
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ser Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:90:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

Val Thr Arg Thr Thr Gly Glu Val Ala Ala Arg Thr Ala Asn Thr Phe
1 5 10 15

Ala Ser Leu Phe Thr Thr Gly Pro Ser Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:91:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Thr Thr Tyr Ser Ser Gly Gln Glu Ala Gly Arg Thr Val Ala Gly Phe
1 5 10 15

Ala Gly Leu Phe Thr Thr Gly Ala Lys Gln Asn Leu Tyr Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:92:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

Ser Thr Ser Val Val Gly Gly Arg Gln Ala Ser Ala Thr Phe Arg Phe
1 5 10 15

Thr Ser Phe Phe Ser Arg Gly Pro Thr Gln Glu Ile Lys Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:93:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

Asn Thr Tyr Thr Ala Gly Ser Met Ala Gln Ser Ile Tyr Arg Leu
I 5 10 15

Thr Asp Ile Phe Ser Thr Gly Pro Ser Gln Lys Leu Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:94:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

Arg Thr Ile Leu Met Ala Gly Arg Gln Ala Glu Val Thr Gln Ser Phe
1 5 10 15

Pro Gly Leu Phe Ser Leu Ala Pro Ser Gln Lys Ile His Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:95:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

Asp Thr Tyr Ala Thr Gly Gly Ser Val Ala Ser Ile Met Ala Gly Ile
1 5 10 15

Ala Arg Phe Phe Ser Pro Gly Ala Arg Gln Asp Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:96:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 30 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

Glu Thr Tyr Ala Thr Gly Ala Ser Ala Gly His Asp Val Ser Ser Phe
1 5 10 15

Ala Arg Leu Phe Ala Pro Gly Ala Arg Gln Asn Ile Gln Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:97:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

Glu Thr His Arg Thr Gly Gly Ser Ala Ala Arg Ser Thr Ala Gly Val
1 5 10 15

Ala Ser Leu Phe Thr Pro Gly Ala Arg Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:98:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

Asn Thr Arg Ala Val Gly Met Val Gln Ser Arg Thr Thr Tyr Ala Leu
1 5 10 15

Thr Ser Leu Phe Asp Ser Gly Ala Ala Gln Lys Leu Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:99:

151
(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Thr Thr Ala Gly Leu
1 5 10 15

Val Gly Leu Leu Thr Pro Gly Ala Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:100:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

Glu Thr His Val Thr Gly Gly Ser Ala Gly Arg Ser Val Leu Gly Ile Ala
1 5 10 15

Ser Phe Leu Thr Arg Gly Pro Lys Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:101:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

Glu Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Thr Leu
1 5 10 15

Ala Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:102:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:

Ala Thr Tyr Thr Ser Gly Gly Val Ala Ser His Thr Thr Ser Arg Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:103:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Arg Phe
1 5 10 15

Thr Ser Phe Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:104:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:104:

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Arg Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val

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(2) INFORMATION FOR SEQ ID NO:105:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:105:

Ala Thr Tyr Thr Ser Gly Ala Val Ala Ser His Thr Thr Ser Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:106:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:106:

Glu Thr Tyr Thr Ser Gly Arg Val Ala Gly His Thr Thr Ser Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:107:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:107:

Ala Thr Tyr Thr Ser Gly Gly Val Ala Gly Arg Thr Thr Ser Gly
1 5 10 15

Phe Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:108:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:108:

Glu Thr His Thr Thr Gly Arg Val Ala Gly His Thr Thr Ser Arg Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

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(2) INFORMATION FOR SEQ ID NO:109:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:109:

Glu Thr His Thr Thr Gly Arg Val Val Gly His Thr Thr Ser Gly
1 5 10 15

Phe Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:110:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:110:

Glu Thr His Thr Thr Gly Arg Val Ala Gly Arg Thr Thr Ser Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:111:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:111:

Thr Thr Tyr Thr Ser Gly Gly Val Ala Gly Arg Thr Thr Ser Gly
I 5 10 15

Phe Thr Ser Leu Phe Ser Ser Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:112:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:112:

Lys Thr Tyr Thr Ser Gly Gly Ala Ala Ser His Thr Thr Ser Arg
5 10 15

Phe Thr Ser Leu Phe Ser Pro Gly Ala Ser Gln Arg Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:113:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:113:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:114:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:114:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val Gln Gly Phe
1 5 10 15

Ala Ser Leu Phe Arg Leu Gly Ala Ser Gln Glu Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:115:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:115:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly Arg Ala Val His Gly Ile
1 5 10 15

Ala Ser Leu Phe Ser Leu Gly Ala Ser Gln Lys Asn Gln Leu Val
20 25 30

2) INFORMATION FOR SEQ ID NO:116:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:116:

Ser Thr Arg Val Thr Gly Gly Gln Gln Gly His Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Arg Leu Gly Ala Ser Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:117:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:117:

Asn Thr Arg Val Thr Gly Gly Arg Gln Gly Arg Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Ala Ser Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:118:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:118:

Gly Thr Arg Val Thr Gly Gly Arg Gln Gly Arg Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Ser Pro Gly Ala Ser Glu Asn Ile Arg Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:119:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:119:

Ser Thr Arg Val Ser Gly Gly Gln Gln Gly Arg Ala Ala His Ser Leu
1 5 10 15

Thr Ser Leu Phe Thr Leu Gly Ala Ser Gln Asn Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:120:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:120:

Ser Thr His Val Thr Gly Ala Leu Gln Gly Arg Ala Ala Tyr Gly Ile
1 5 10 15

Thr Ser Phe Leu Ser His Gly Pro Ser Gln Lys Ile Gln Leu Val
20 25 30

2) INFORMATION FOR SEQ ID NO:121:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:121:

Ser Thr Gln Val Met Gly Gly Gln Gly Arg Ala Ala Tyr Ser Leu
1 5 10 15

Ala Ser Leu Leu Ser Pro Gly Ala Asn Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:122:

 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:122:

Ser Thr Gln Val Met Gly Gly Gln Gly Arg Ala Ala Tyr Ser Leu
1 5 10 15

Ala Ser Leu Leu Gly Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:123:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:123:

Ser Thr Gln Val Met Gly Gly Gln Gln Gly Arg Ala Ala Tyr Ser Leu
1 5 10 15

Ala Ser Leu Leu Ser Pro Gly Ala Ser Gln Lys Ile Gln Leu Val
20 25 30

(2) INFORMATION FOR SEQ ID NO:124:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:124:

Arg Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:125:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:125:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:126:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:126:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asp Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:127:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:127:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Phe
1 5 10 15

Thr Ser Leu Leu Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:128:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:128:

Gln Thr Arg Thr Val Gly Gly Gln Val Gly His Ser Val Arg Gly Leu
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:129:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:129:

Gln Thr Arg Thr Val Gly Gly Gln Met Gly His Gly Val Arg Gly Leu
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Arg Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:130:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:130:

Gln Thr His Thr Val Gly Gly Gln Met Gly His Gly Val Arg Gly Leu
1 5 10 15

Thr Ser Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:131:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:131:

Gln Thr His Thr Val Gly Gly Gln Met Gly His Gly Val Arg Gly Leu
1 5 10 15

Thr Asn Leu Phe Ser Ala Gly Ser Ala Gln Asn Ile Gln Leu Ile
20 25 30

(2) INFORMATION FOR SEQ ID NO:132:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:132:

Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly Phe
1 5 10 15

Val Ser Leu Leu Ala Pro Gly Ala
20

(2) INFORMATION FOR SEQ ID NO:133:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (A) NAME/KEY: Xaa
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /label=Ahe
/note= 2-amino heptanoic is butyl alanine

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:133:

Xaa Glu Thr His Val Thr Gly Gly Ser Ala Gly His Thr Val Ser Gly
1 5 10 15

Phe Val Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val Gln Leu
20 25 30

(2) INFORMATION FOR SEQ ID NO: 134:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 6 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:134:

Ser Leu Phe Xaa Xaa Gly